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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,286	08/02/2001	Xiaobin Zhao	0623.1110001/JMC/MGP	3882
26191	7590	09/06/2006	EXAMINER	
FISH & RICHARDSON P.C. PO BOX 1022 MINNEAPOLIS, MN 55440-1022			LEWIS, PATRICK T	
			ART UNIT	PAPER NUMBER
			1623	
DATE MAILED: 09/06/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,286

Applicant(s)

ZHAO, XIAOBIN

Examiner

Patrick T. Lewis

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 5-7 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08232006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 5-6 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Malson US 4,963,666 (Malson).

Malson teaches that a method commonly employed for producing insoluble polymeric materials involves covalent crosslinking of soluble polymers with bifunctional or polyfunctional reagents (columns 1-3). Crosslinking of polysaccharides is often performed by reacting the hydroxyl groups of the polysaccharides in an alkaline aqueous solution with bi- or polyfunctional epoxides to thus bind the polysaccharide chains to one another via ether bonds, with concomitant formation of a gel. A process for producing degradable polysaccharide gels is described in Swedish patent application 8403817-3 according to which carboxyl groups of the polysaccharides are crosslinked with di- or polyfunctional epoxides by means of acid catalysis, whereby an insoluble gel is formed. In this case the bonds produced are ester bonds which in contrast to ether bonds are degradable in physiological environments. Malson teaches a method for producing gels of crosslinked polysaccharides by which it becomes possible inter alia to combine the aforesaid methods for acid- and base-catalyzed

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crosslinking so as to produce novel gel materials of controllable degradability. The principle of the manufacturing process is as follows: the polysaccharide containing carboxyl groups is at first reacted with a bi- or polyfunctional epoxide. This reaction may be performed in an alkaline, acidic or neutral medium. Following the removal of excess epoxide, the polysaccharide is dried at a desired pH. In the course of the drying process the polysaccharide molecules which have been epoxy-activated in the preceding step will move into closer proximity to each other and will become crosslinked. The process is particularly useful for producing water-sellable films of hyaluronic acid. Conditions in which the initial epoxy-activation takes place may be varied within a wide range and are chosen according to the properties desired in the final product. As has been mentioned above ester bonds are obtained under acidic reaction conditions. Where it is desired to introduce this type of degradable bonds in the first step a pH is chosen within the range of from 2 to 6. By contrast, stable ether bonds are obtained if the activation is carried out at a pH > 8. At a neutral pH a mixture of the two types of bonds will be obtained. An example of a product according to the invention is the material obtained if the initial activation is carried out with a bi- or polyfunctional epoxide in an alkaline medium and the final crosslinking is carried out in an acidic medium after removal of non-bound reagent. Alternatively, the activation may be performed in an acidic medium and the final crosslinking in an alkaline medium; the thus resultant product is another example of a product according to the invention. It will be appreciated that in both cases the final product will contain both ester bonds and ether bonds.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malson US 4,963,666 (Malson) as applied to claims 5-6 and 11 above.

Malson differs from the instantly claimed invention in that Malson does not explicitly teach the use of 1,2,3,4-diepoxybutane or 1,2,7,8-diepoxyoctane; however, the use of known members of classes of reagents in reactions to effectuate the same type of modifications taught in the prior art is not seen to render the instantly claimed methods obvious over the art. Once the general reaction has been shown to be old, the burden is on the applicant to present reason or authority for believing that a group on the starting compound would take part in or affect the basic reaction and thus alter the

nature of the product or the operability of the process and thus the unobviousness of the method of producing it.

Conclusion


6. Claims 5-8 and 11 are pending. Claims 5-7 and 11 are rejected. Claim 8 is allowed.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick T. Lewis whose telephone number is 571-272-0655. The examiner can normally be reached on Monday - Friday 10 am to 3 pm (Maxi Flex).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Dr. Patrick T. Lewis
Primary Examiner
Art Unit 1623

ptl